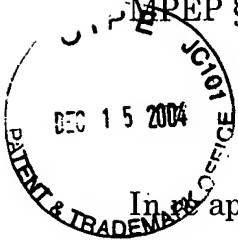


Appl. No. 10/646,634
Petition to Make Special Under
MPEP § 708.2, II dated December 07, 2004

Users not listed 1RW
Attorney Docket No. 89205.0011
Customer No.: 26021 ✓



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
In application of:

Michael S. Robbins, et al.

Serial No.: 10/646,634

Filed: August 21, 2003

For: INTERFERENCE RESISTANT
INFRARED EXTENSION SYSTEM

Art Unit: 2632

Confirmation No.: 9781

Examiner: Not Assigned

**PETITION TO MAKE SPECIAL UNDER
MPEP § 708.02, II**

Mail Stop Petitions
Commissioner for Patents
P.O. Box 1450
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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

December 7, 2004

Date of Deposit

Rowena R. Estrada

Name

Signature

12/07/04

Date

Dear Sir:

This is a Petition to Make Special the above-identified patent application
under the provisions of M.P.E.P. § 708.02, II. The grounds and conditions for
granting this application special status are based on M.P.E.P. § 708.02, II:
Infringement.

As provided in M.P.E.P. § 708.02, Applicant agrees to the special examination
procedure detailed therein. In support of this Petition, Applicant submits the
following:

1. Declaration of Michael S. Robbins, applicant and representative of
assignee.

2. Declaration of Samuel B. Stone.

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Appl. No. 10/683,688
Petition to Make Special Under
MPEP § 708.2, II dated November 30, 2004

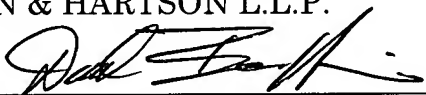
Attorney Docket No. 89205.0011
Customer No.: 26021

3. The \$130.00 fee associated with this Petition to Make Special may be charged to Deposit Account No. 12-1820. Please charge any insufficiency or credit any overpayment to Deposit Account No. 12-1820. A copy of this document is enclosed.

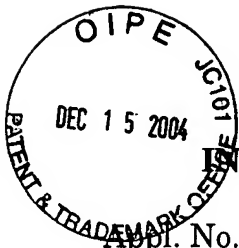
Accordingly, Applicant requests that this Petition to Make Special be granted and the application undergo accelerated examination.

Respectfully submitted,
HOGAN & HARTSON L.L.P.

Date: December 7, 2004

By: 
David H. Ben-Meir
Registration No. 46,152
Attorney for Applicant(s)

500 South Grand Avenue, Suite 1900
Los Angeles, California 90071
Phone: 213-337-6700
Fax: 213-337-6701



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

App. No. : 10/646,634 Confirmation No.: 9781

Applicant : Michael S. Robbins, et al.

Filing Date : August 21, 2003

Title : INTERFERENCE RESISTANT INFRARED EXTENSION SYSTEM

Group Art Unit : 9781

Examiner : Not Assigned

Docket No. : 89205.0011

Customer No. : 26021

DECLARATION OF MICHAEL S. ROBBINS

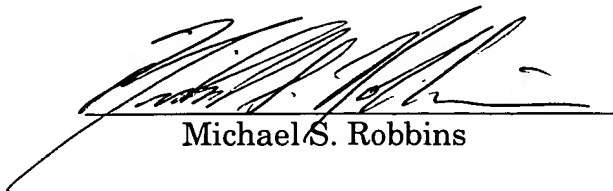
1. I am Vice-President of Xantech Corporation, and a named inventor and representative of the assignee, Xantech Corporation, of the above-referenced application.

2. Niles Corporation presently markets and sells in the United States Wall-Mount Infrared Sensor Model WS100R. On behalf of Xantech, Samuel B. Stone, Esq. has made a comparison of the WS100R with the claims of the above-referenced application. (Please see the accompanying Declaration of Samuel B. Stone.)


3. I possess good knowledge of the pertinent prior art.

4. The references I deem most closely relate to the subject matter of the claims are already of record.

Dated: 6 December 2004


Michael S. Robbins


Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

TRANSMITTAL FORM  (to be used for all correspondence after initial filing)		Application Number	10/646,634
		Filing Date	August 21, 2003
		First Named Inventor	Michael S. Robbins
		Art Unit	2632
		Examiner Name	Not Assigned
Total Number of Pages in This Submission	40	Attorney Docket Number	89205.0011

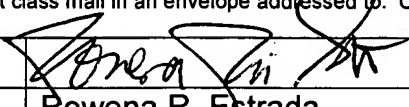
ENCLOSURES (Check all that apply)

<input type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached <input type="checkbox"/> Amendment/Reply <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Documents <input type="checkbox"/> Reply to Missing Parts/Incomplete Application <input type="checkbox"/> Reply to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input checked="" type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) _____ <input type="checkbox"/> Landscape Table of CD	<input type="checkbox"/> After Allowance Communication to TC <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below): Decl. of Michael S. Robbins Decl. of Samuel B. Stone Postcard
Remarks		

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

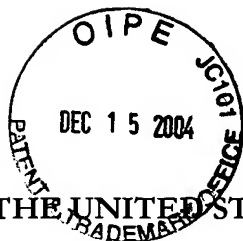
Firm Name	Hogan & Hartson L.L.P.		
Signature			
Printed name	David H. Ben-Meir		
Date	December 07, 2004	Reg. No.	46,152

CERTIFICATE OF TRANSMISSION/MAILING

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below:			
Signature 			
Typed or printed name	Rowena R. Estrada	Date	December 7, 2004

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No. : 10/646,634 Confirmation No.: 9781a
Applicant : Michael S. Robbins, et al.
Filing Date : August 21, 2003
Title : Interference Resistant Infrared Extension System
Group Art Unit : 2632
Examiner : Not Assigned
Docket No. : 89205.0011
Customer No. : 26021

DECLARATION OF SAMUEL B. STONE

1. Samuel B. Stone is an attorney at law and member of the Bar of the State of California and licensed to practice in that state, is an attorney Of Counsel, with Orrick, Herrington & Sutcliffe LLP, with an address of 4 Park Plaza, Suite 1600, Irvine, California 92614, and is registered to practice before the United States Patent and Trademark Office, Registration No. 19,297.

2. I have been asked to review the above-identified United States Patent Application in connection with possible infringement of claims thereof by a Niles Audio Corporation, of 12331 S. W. 130 Street, Miami, Florida 33186, Wall-Mount Infrared Sensor Model WS100R.

3. I have reviewed the Niles Installation and Operation Guide, and detailed technical information, circuit diagrams and wavelength diagrams provided to me (copies of which are attached hereto as further described below), and made a rigid comparison of the Niles WS100R product with the claims of the above-referenced application.

4. Based on my review, it is my opinion that at least several claims of the patent application read on, and if issued in a patent unquestionably would be infringed by, the Niles WS100R as set forth below, namely at least Claims 4-5, 2-14 and 16-18.

5. The following supporting exhibits are attached:

Exhibit A. Niles WS100R Installation and Operation Guide,

Exhibit B. Block diagram of the Niles WS100R prepared by technical personnel of Xantech Corporation,

Exhibit C. A description of the characteristics of operation of the Niles WS100R prepared by technical personnel of Xantech Corporation,

Exhibit D1 – D4. Filter wavelength characteristics of both the Xantech filter and Niles filter prepared by Photonic Detectors, Inc.

Attached hereto as Exhibit E is a claim chart indicating the manner in which Claims 4, 5, 12, 13, 14, 16, 17 and 18 read on the Niles model WS100R.

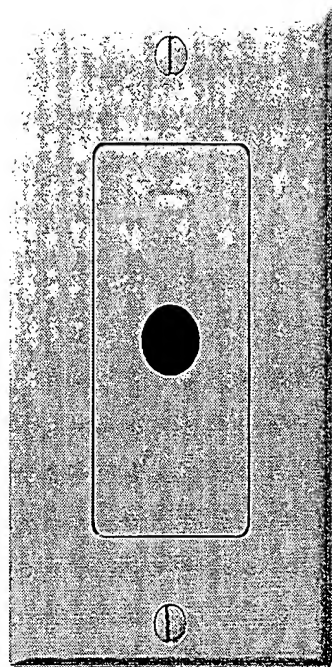
I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Title 18, United States Code, § 1001 and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Dated: Nov. 29, 2004



Samuel B. Stone

INSTALLATION & OPERATION GUIDE



WS100R

WALL-MOUNT INFRARED SENSOR



NILES®

BLENDING HIGH FIDELITY AND ARCHITECTURE®

WS100R

Wall-Mount
Infrared Sensor

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Introduction

The WS100R is a wall-mount, Decora® style IR sensor designed for use with the Niles infrared extender systems.

Installed in a remote room location, the WS100R receives the IR commands transmitted from your existing hand-held remotes in that room. The commands are carried via a category 5 cable to your A/V equipment in another room, and instantly "repeated".

The WS100R is compatible with all current Niles infrared systems. It may be used along with, or as an alternative to, the Niles TS100, MS100, MS200, MVC100IR and CS100 sensors or the IntelliPad®.

The WS100R is just one part of the three building blocks necessary to complete a Niles IR repeating system:

- IR Main System Unit—Models MSU140, MSU250, MSU480 and MSU440Z.
- IR Sensors/Keypads—Models WS100, TS100, MS100, MS200, CS100, MVC100IR and the IntelliPad®.
- IR Flashers—Models MF1, MF2, MF1FV, MF2FV and the IRB1.

An IR sensor expansion hub, Model IRH610, is available to provide additional sensor inputs to your system.

Features and Benefits

The WS100R offers a number of improvements over other wall-mount IR sensors.

- Plasma-proof performance— allows placement of the WS100R near plasma displays.
- CFL interference resistant— expands installation flexibility to areas with fluorescent lighting.
- Works under most lighting conditions, including indirect sunlight— eliminates environmental restrictions.
- Universal system— compatible with virtually all brands of A/V equipment and remote controls.
- Excellent IR receiving range— you get 18' to 30' of remote control range (depending upon the strength of your handheld remote).
- 100% factory tested for pickup range and angle.
- Small size of only 2-3/4" wide by 4-1/2" high by 1-1/4"— fits in a one-gang box.
- Printed circuit board design uses surface mount technology (SMT), assuring high reliability.
- Ideal for both home and commercial installations.
- Removable Decora-style snap-in color insert. (Available in four colors).
- Two year parts and labor warranty.

Installation Considerations

The WS100R is a Decora-style module and is designed to use standard Decora-style cover plates and mounting hardware. Decora cover plates (up to 6-gang) with color-matched plate screws are available from your Niles dealer.

Type of Cable

The WS100R connects to the Niles infrared main systems unit or IRH610 sensor expansion hub with an individual home run of category 5 cable. When running wires inside walls, most states and municipalities in the U.S. specify that you must use a special type of wire. Usually, the requirement is that the wire has a specific "CL" fire rating, such as "CL-2" or "CL-3". Consult your Niles dealer, building contractor, or local building and inspection department if unsure about which type of wire is best for your application.

WS100R Mounting Location

Locating the WS100R in the center of a room usually results in the most even IR receiving coverage, especially if the room is square shaped. Rooms that are L-shaped or long and narrow require more careful consideration. With these types of rooms, installing the WS100R closest to the primary location of the user will ensure the best performance.

Receiving Range and Pickup Angle

The receiving range of the WS100R will vary according to the IR output strength of the remote control being used. Remote strength varies among brands depending on the number and size of batteries used, and how many IR emitters the remote has. For example, remotes that operate on two small AAA batteries and have only one IR emitter are generally not

as strong as remotes that use the larger AA size batteries and have two emitters. Tests with various manufacturers' remote controls have shown that the operating range can vary from a minimum of 18' to a maximum of about 30'.

Infrared signals travel essentially line-of-sight. They will not pass through or around solid objects. Do not rely on an IR signal being able to "bounce" off a wall or object to the WS100R.

The IR pickup angle of the WS100R is 30° off-axis (horizontal and vertical) at 18'.

Junction Boxes

The mounting depth of the WS100R is 1-1/4". When installed, the unit extends 3/4" behind the sheetrock wall (assuming 1/2" sheetrock). Suitable electrical boxes are available from your Niles dealer or local electrical supply company.

DO NOT INSTALL THE WS100R INTO ELECTRICAL BOXES WITH 110 VOLT DEVICES.

Some states or municipalities allow devices such as the WS100R to be installed into the same electrical box as 110 volt devices, provided a "low-voltage partition" is used between the devices. We do not recommend this. The cable connected to the WS100R can act as an "antenna" for electrical noise. Locating the WS100R cable too close to a light dimmer or switch may interfere with the WS100R. If you must locate the WS100R near electrical devices, install it in a separate metal electrical box, ground the box to the electrical system ground, and route the WS100R cable several feet away from all electrical wiring.

TOOLS REQUIRED

- 1/8" Standard Slotted Screwdriver
- 1/4" Standard Slotted Screwdriver
- Wire Stripper

WALL-MOUNT INFRARED SENSOR

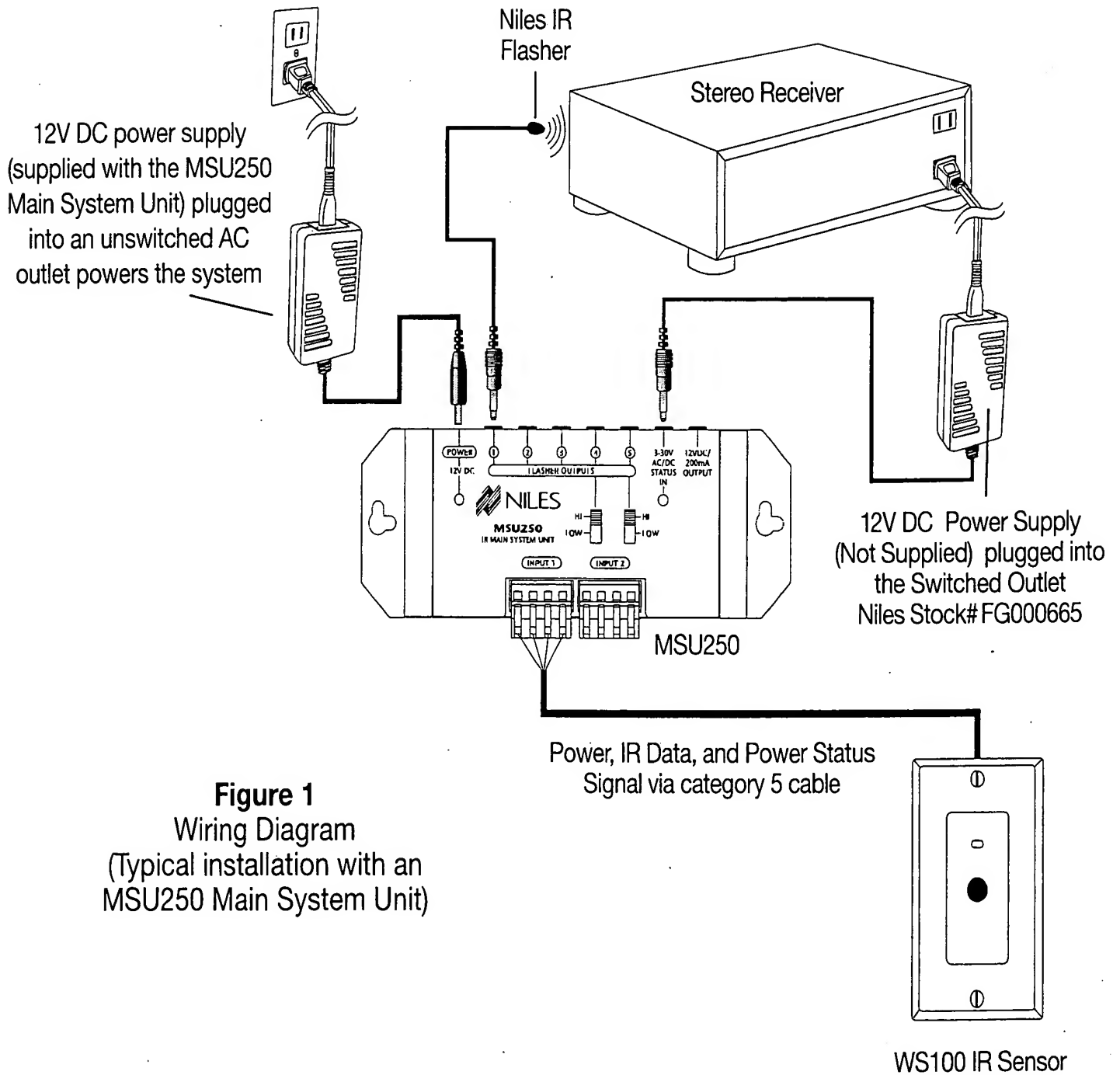


Figure 1
Wiring Diagram
(Typical installation with an
MSU250 Main System Unit)

WALL-MOUNT INFRARED SENSOR

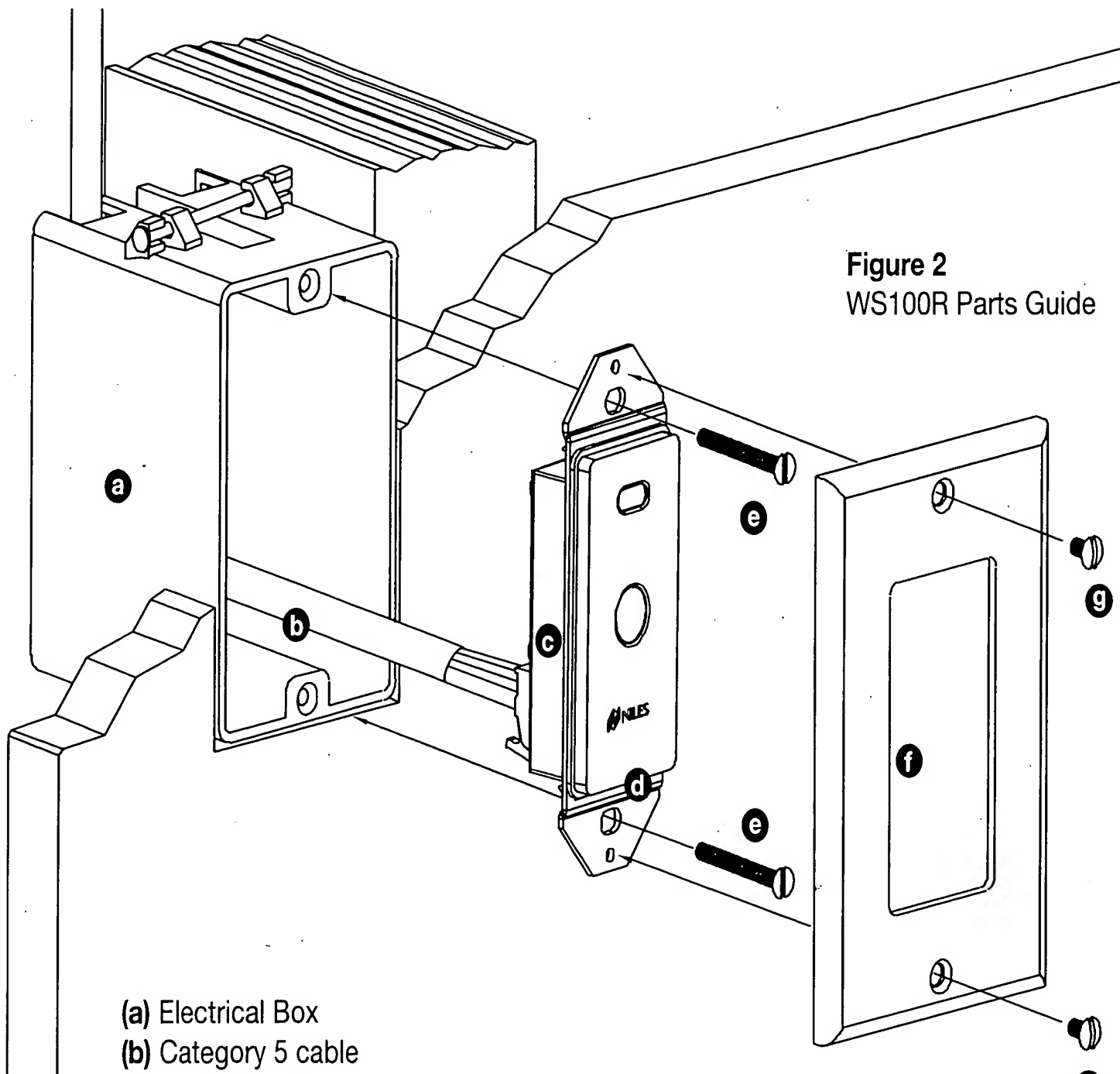


Figure 2
WS100R Parts Guide

- (a) Electrical Box
- (b) Category 5 cable
- (c) WS100 IR Receiver (supplied)
- (d) Snap-on Color Insert (supplied)
- (e) Device Screws (2 supplied)
- (f) Decora Faceplate (supplied)
- (g) Faceplate Screws (2 supplied)

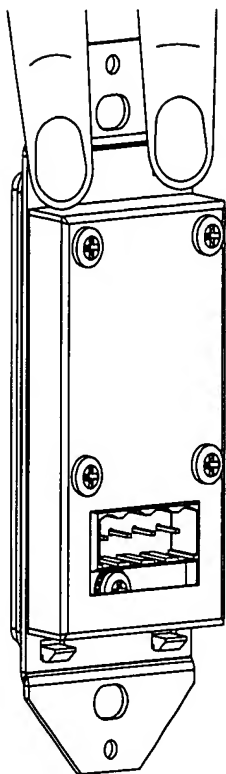


Figure 3
Removing the
Decora-style Insert

"TECH TIP"

Do not exert
excessive pressure
on the plastic
mounting tabs.

Avoiding Interference

The WS100R is designed to work in most applications including plasma displays and in areas where CFL lighting and indirect sunlight are present. You should avoid locating the WS100R near potential sources of electrical or optical noise, such as light dimmers or low-voltage lights.

Avoiding Electrical Interference

Avoid locating the WS100R near any potential sources of electrical or optical noise, such as light dimmers, low-voltage lights, and neon lights.

Avoiding Optical Feedback

If installing the WS100R in the same room as an IR flasher, it is possible for the flasher's IR output to be picked-up by the WS100R. This effect, known as an optical feedback loop, can cause erratic operation. Optical feedback is similar to acoustical feedback: the howling or whistling sound heard in a P.A. system when the microphone is too close to the speaker. To avoid optical feedback:

1. Re-position the flasher(s) and/or the sensor.
2. Use Niles MF1 or MF2 flashers and cover them with the supplied IR blockers.

Changing the Color of the WS100R

The Decora-style insert on the WS100R is removable, allowing fast and easy color changes as needed. Inserts are available in a variety of colors.

If you need to change the color of the WS100R:

1. Obtain the WS100R Decora-style insert in the desired color from your Niles dealer.

2. Hold the WS100R as shown in (Figure 3). Locate the two plastic mounting tabs at the top rear of the Decora-style insert. Using two fingers, simultaneously press both tabs down (towards the center of the insert) and forward (away from you) until the insert pops free from its mounting slots.
3. Locate the new Decora-style insert. Hold the WS100R so that it is facing you. Insert the two bottom tabs into the bottom slots first, followed by the two tabs on the top. Snap the insert into place by carefully pressing on the front of the insert.

Using the WS100R with the Intellipad Ci system.

The WS100R is fully compatible with the Niles Intellipad Ci line, follow the wiring instructions in Figure 4. For specific information see your Intellipad Ci manual.

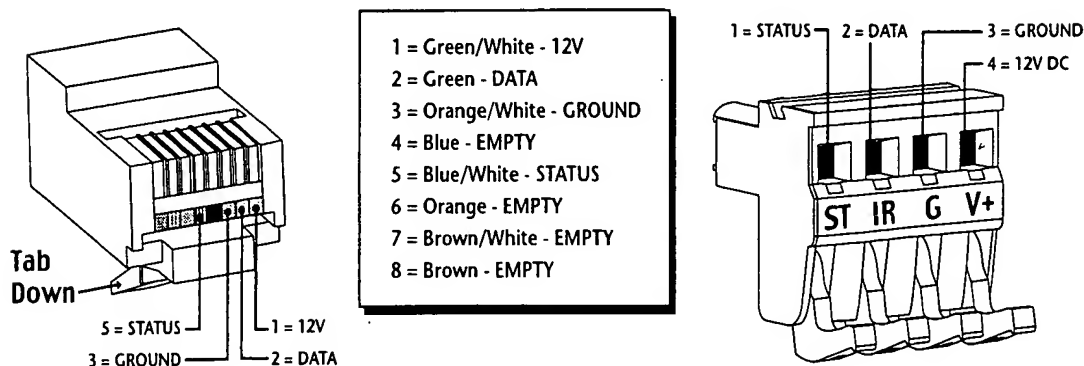


Figure 4

This color code is based on the industry standard T568A coding for the RJ45 connector. When connecting the WS100R to the Niles Ci system observe this Pin configuration.

Installation

"TECH TIP"

Avoid installing the WS100R next to a light dimmer.

If you are installing the WS100R into an existing wall, take time to consider any possible obstructions which may be hidden inside the wall, such as wood or metal studs, electrical, telephone or other types of wiring, plumbing, AC or heating conduit, etc.

1. Locate the connector plug.
2. Strip 1/4" of insulation from the end of each wire.
3. Use a small flathead screwdriver or your thumbnail to raise the locking tabs, exposing the holes on the removable connector plug.
4. Insert each wire into the appropriate hole on the removable connector plug, and snap the locking tab down. To help you, the connector plug is keyed. Insert the smooth side of the connector plug into the smooth side of the socket. Don't force the scalloped side of the connector plug into the smooth side of the socket. (Figure 5)
5. Use the shorter plate screws to fasten the Decora cover plate to the WS100R. **DO NOT OVER-TIGHTEN THE PLATE SCREWS OR YOU MAY DAMAGE THE COVER PLATE.** Line up all the screws in the same direction for a finished look.

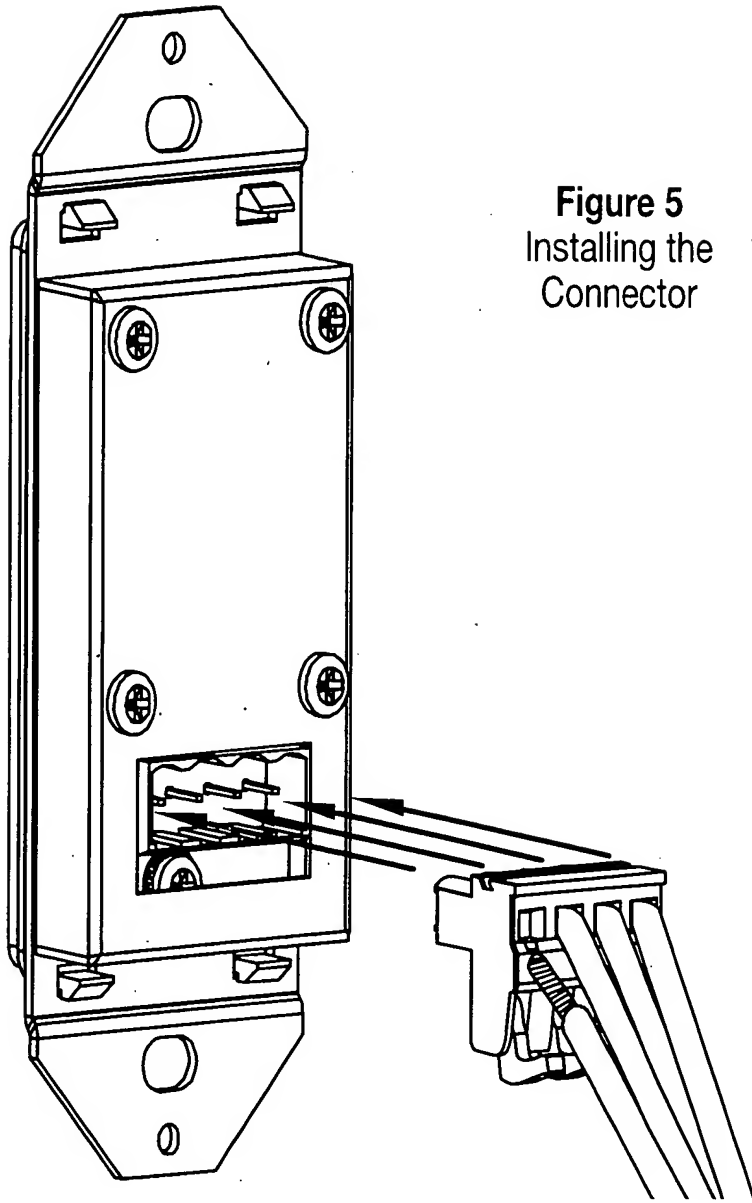


Figure 5
Installing the
Connector

NOTE: Certain "old work" or "retro-fit" boxes, such as the Carlon B225R, have a plastic "lip" which interferes with the Decora plate screws. This lip prevents you from being able to tighten these screws completely. To make the clearance necessary for these screws, you must remove the parts of the lip causing the interference. There are two ways to accomplish this:

1. Drill through the lip of the box at the screw points.
2. Cut notches into the lip with a pair of diagonal cutters.

Intellipad Wiring

See your MSU manual if you are connecting the WS100R with an IntelliPad system.

Operation

Operation of the WS100R is simple. Stand within the operational range of your WS100R. Aim your hand-held remote at the WS100R and press the button for the desired command. Your IR command is instantly repeated to your A/V equipment.

Green "Power Status" LED

When the WS100R is correctly connected (as shown in Figure 1), the Green LED will stay lit as long as the preamp/receiver is on. When your preamp/receiver is off, the LED will stay off.

Blue "Flash-back" LED

The blue "flash-back" LED on the WS100R visually confirms the reception of an IR command.

Troubleshooting

This manual contains instructions for the WS100R only. For specific information on the adjustment and operation of your Niles infrared extender system, please refer to the instruction manual included with your Niles IR main system unit (MSU140, MSU250, MSU480 MSU440Z, IntelliControl®).

The bi-color blue/green LED on the front of the WS100R is a useful troubleshooting aid. The led should light solid green when status is detected.

The blue LED should light only when a remote command is being received. If the LED on the WS100R "flickers", and the WS100R functions normally, there is no cause for concern, some stray IR signal are being received by the WS100R but are not being repeated.

1. Test the remote control(s) by operating the A/V equipment directly. Replace the batteries if needed.
2. Double check the cable connections on all WS100R's and on the main system unit. Look for open, shorted or reversed wires.
3. Test for interference from the following sources:
 - Neon or halogen lights in the room.
 - Light dimmers, beginning with those closest to the WS100R.

Observe the WS100R's LED while performing all the tests. It is possible to have interference from more than one source.

Eliminating optical feedback

In some installations, two conditions combine to create an optical feedback loop. Symptoms can include: poor range, intermittent operation or no operation.

The conditions which sometimes combine to create a feedback loop are:

1. Both a sensor and a flasher are located within the same room.
2. There is some low-level noise or interference on your system.

You can eliminate optical feedback by replacing any IRB1 "flooding flasher" with MF1 or MF2 MicroFlashers and covering all flashers with the supplied IR blocking covers.

Identifying the type of interference

The “flash-back” LED on the front of the WS100R is a useful trouble-shooting aid.

The LED should light blue only when a remote command is being received. However, if the LED on the WS100R “flickers”, and the WS100R functions normally, there is no cause for concern.

If the WS100R does not work, and the LED does not light at all: Test the remote control(s) by operating the A/V equipment directly. Replace the batteries if needed. Double check the cable connections on all WS100R's Main System Unit and on the IR main system unit. Consult your IR Main System Unit's manual for more detail.

If the WS100R does not work, and the LED flickers or remains solidly lit: Cover up the Sensor with a piece of cardboard (your hand will actually create electromagnetic interference under some conditions). Observe the IR test LED.

IR Test LED Off:

Optical Interference.

IR Test LED On or Flickering:

Electromagnetic Interference.

EMI (Electromagnetic Interference)

Identify the source of the interference. The most common sources of electromagnetic interference are listed in the Installation Considerations section on page 3. To eliminate EMI try the following methods:

1. Move the sensor or the sensor cable away from the EMI source or move the source of the EMI away from the sensor or the cable.
2. Connect the Sensor's GND terminal to true earth ground (if this isn't feasible use the main system unit's GND terminal).

There are many methods for reducing interference. Which solution is best for you depends on your situation. If you require further assistance contact Niles Technical Support at 1-800-289-4434.

TECH NOTE

The feedback LED can be disabled if it continues to flicker or visual feedback is not desired. Discrete on and off IR commands are available on the Niles Technical support website for disabling the feedback LED. The address is: nilesaudio.com/techsupport.

Specifications

IR System

Compatible with virtually all brands of remotes using carrier frequencies between 26 and 105 kHz.

IR Receiving Range

Varies depending on remote strength; 18 to 30' typical.

IR Receiving Angle

30° off-axis (horizontal and vertical) at 18'.

Mounting

In-wall, fits into most 18 cu. in. single-gang electrical boxes at least 2-3/4" deep, Decora-style face plate.

Wiring Requirements

Individual home-runs of Category 5 cable.

Unit Dimensions

1-5/8" wide x 2-5/8" high x 1-1/4" deep.

Face Plate Dimensions

Decora wall plate; 2-3/4" wide x 4-1/2" high.

Contents

WS100R Sensor x1

Decora Insert x1

Decora faceplate x 1

Removable connector x 1

Device Mounting Screws x 2

Faceplate Spaces x 2

WALL-MOUNT INFRARED SENSOR

Notes

WALL-MOUNT INFRARED SENSOR

Notes



NILES®

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Corporation**

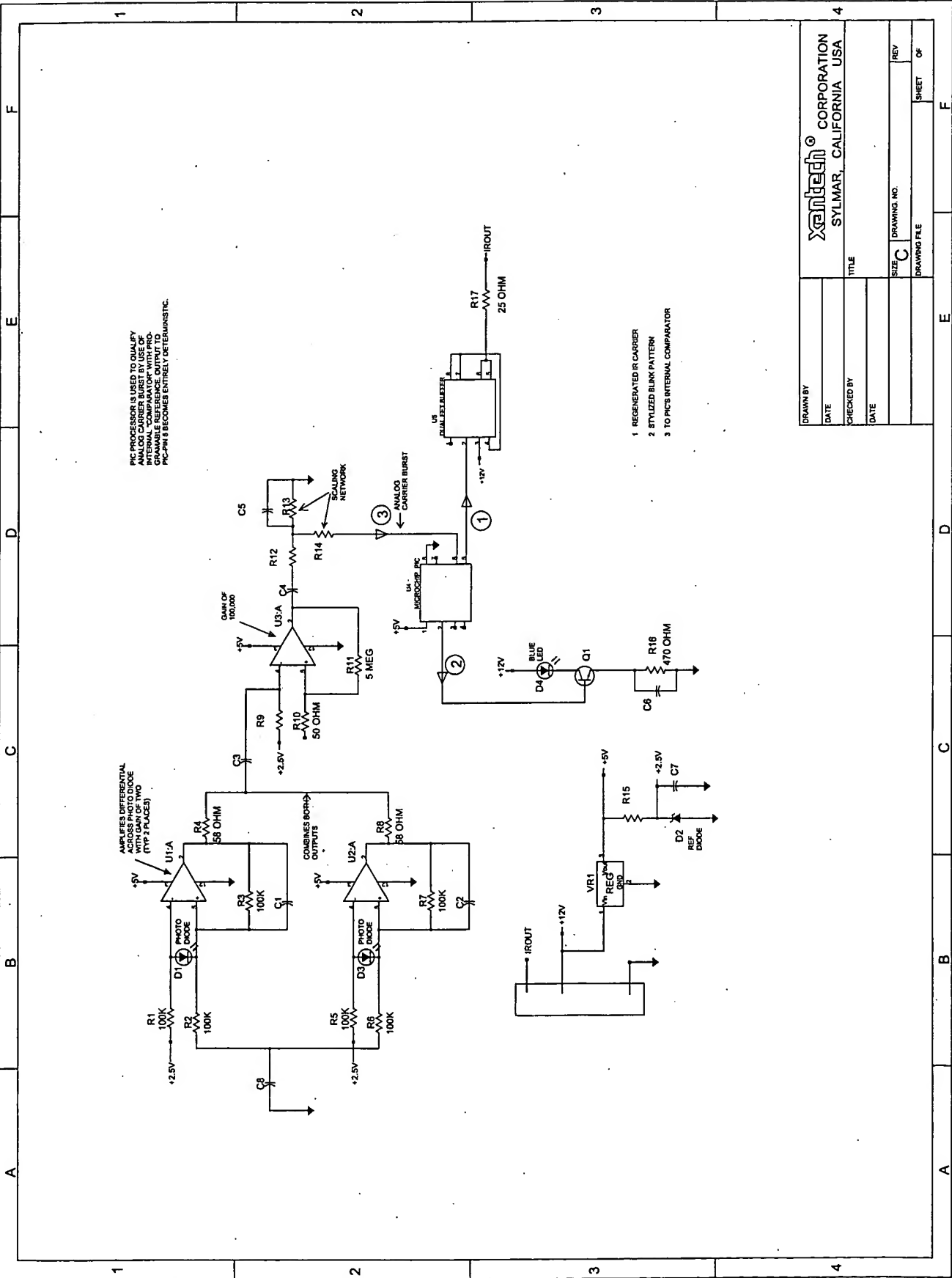
www.nilesaudio.com

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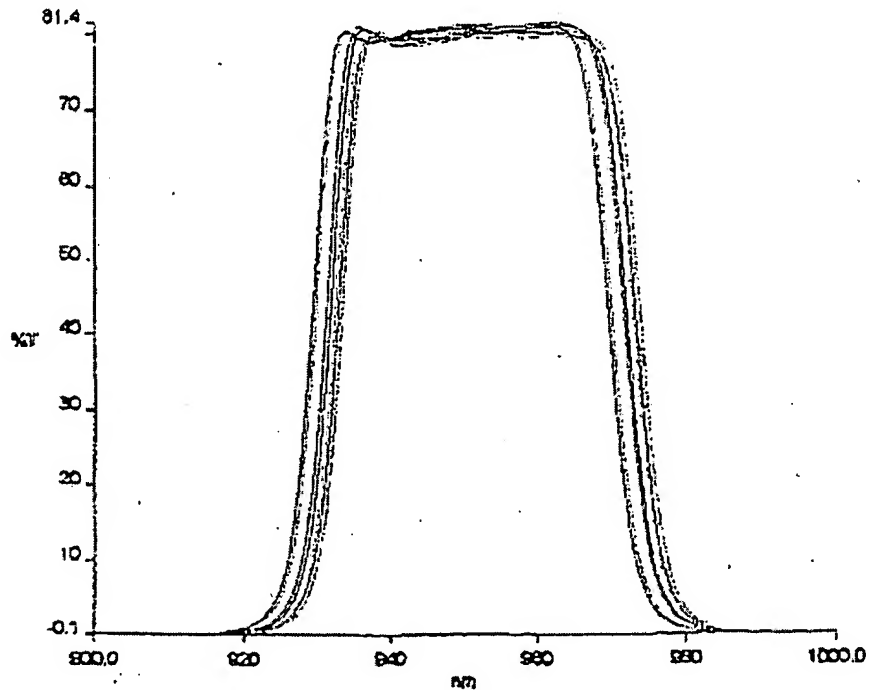
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01/04 Printed in China DS00331ACN



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The IR detection circuit has the following characteristics of operation.

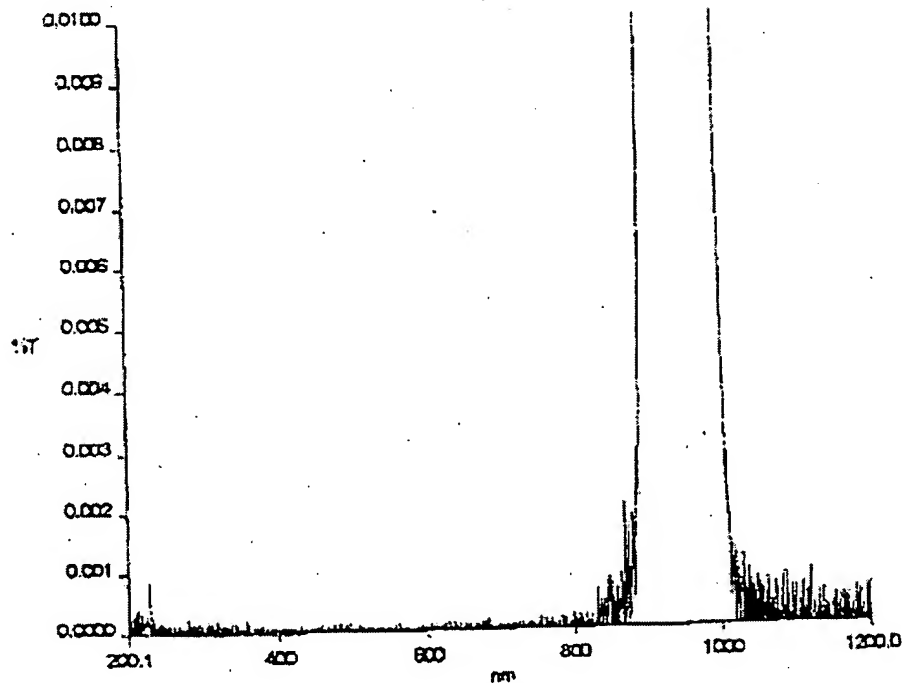
1. A pair of sensitive photodiodes shares an optical filter to favor reception of the IR wavelengths with great attenuation of other wavelengths. Depending on incidence angle of the light signal, each diode can operate alone or in combination with the other diode to contribute a useful signal.
2. Each photodiode is connected to a differential input amplifier that amplifies the small voltage developed across the photodiode leads. The +2.5V reference voltage establishes the Q-point of the amplifier outputs. The gain is approximately two.
3. The dual photodiode/amplifier circuits are combined through a pair of resistors and passed to a third amplifier with a very high gain of approximately 100,000 to extend the range and sensitivity and compensate for the 'insertion' losses of the optical filter.
4. The signal is connected through a 'low-pass' filter to a Microchip "PIC" processor to use the specialized internal analog comparator with firmware-controllable thresholds. This allows qualification and a degree of adaptive signal processing to improve qualification of the processed IR carrier bursts. The PIC's output to the Dual complementary FET buffer is more deterministic in nature. IR carrier pulses passed to the buffer are either fully 'formed' or entirely absent -- based on passing the qualification settings in the PIC's algorithm.
5. The PIC processor also 'stylizes' the signal controlling the visual feedback LED. Any active and qualified signal is converted to a standardized on/off blinking signal 'while' IR signals of specialized coding are replicated at the output.



Method : #10810tb.mfx
Information :
Date : 13-Jan-04

Analyst : MT
Time : 08:37 AM

Spectrum	CWL	OT Peak	Half Bandwidth	<i>Xantech Filter</i>
S1081002.SE	951.40 nm	81.24 %T	41.20 nm	
S1081003.SE	953.30 nm	79.57 %T	41.40 nm	
S1081004.SE	949.70 nm	80.71 %T	41.00 nm	
S1081005.SE	952.60 nm	80.71 %T	41.20 nm	
S1081006.SE	949.30 nm	80.93 %T	41.00 nm	
S1081007.SE	949.30 nm	80.81 %T	41.00 nm	
S1081008.SE	953.60 nm	80.51 %T	41.20 nm	
S1081009.SE	951.50 nm	79.72 %T	41.00 nm	
S1081010.SE	950.00 nm	81.00 %T	41.20 nm	
S1081011.SE	953.20 nm	81.38 %T	41.20 nm	
S1081012.SE	951.70 nm	80.06 %T	41.00 nm	
S1081013.SE	952.90 nm	80.17 %T	41.00 nm	



Spectral Characterization: 5 dB Blocking

Out of Band Blocking (0.00100000 % between 200.00 nm and 1200.00 nm):

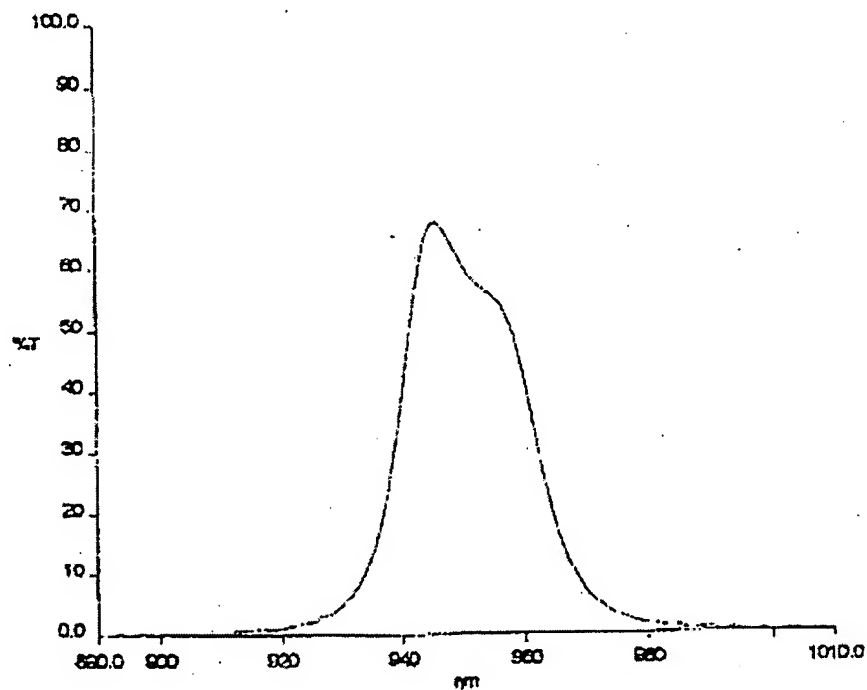
Skirt Points 885.00 nm and 1012.50 nm

Out of Band Leak	0.00158179 % at	870.20 nm
Out of Band Leak	0.00116366 % at	872.00 nm
Out of Band Leak	0.00112179 % at	872.30 nm

Xantech Filter

Skirt Widths:

10.0000 % width -	49.50 nm
1.0000 % width -	71.70 nm
0.1000 % width -	84.00 nm
0.0100 % width -	104.40 nm



Method : p70850th.mfx
Information :
Date : 25-May-04

Analyst : *S. Jones*
Time : 10:23 AM

Spectrum	CWL	RT Peak	Half Bandwidth
111.8P	950.50 nm	67.57 RT	22.50 nm

Niles Filter



photonic
Detectors INC.

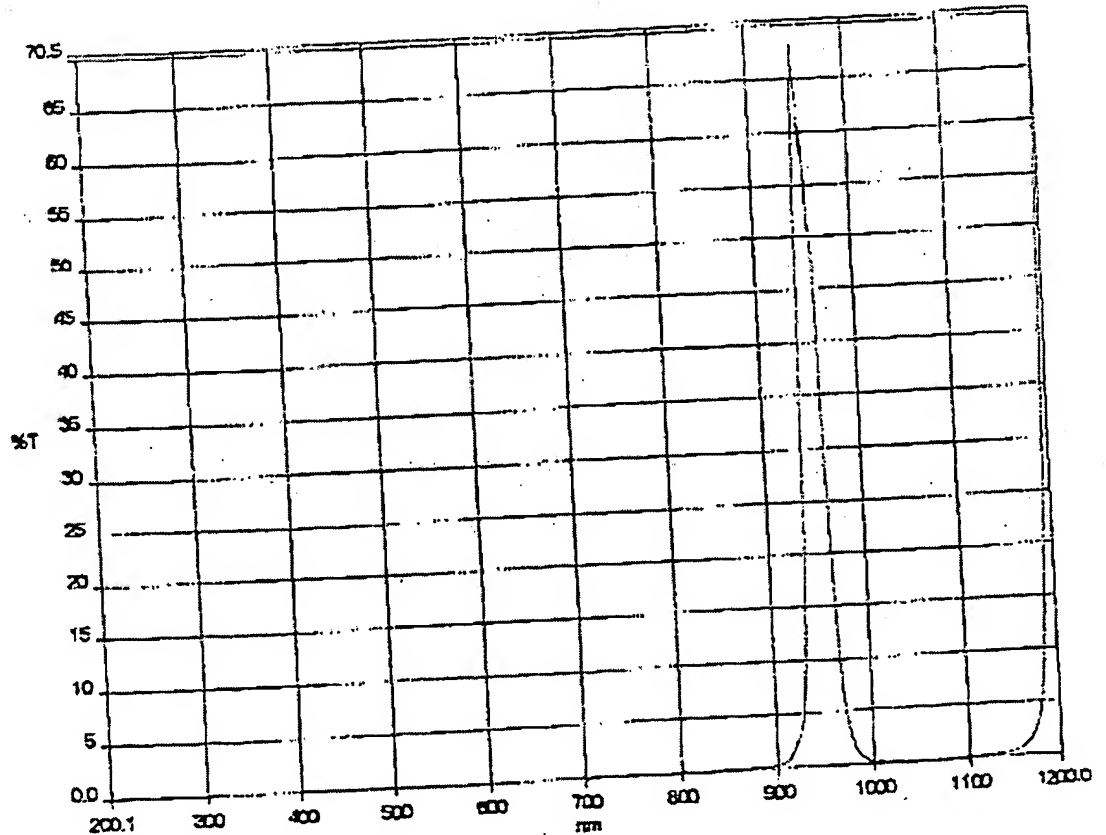
Tel 805 527-3900

Fax 805 527-3931

Date: 5/25/4

19.

Time: 10:15:41 AM



—— 1.SP - 5/25/4

Niles Filter

4. An interference resistant infrared receiver, comprising:

- (a) at least one infrared photodetector (D1 or D3) configured to detect impinging infrared light of a desired wavelength;
- (b) an amplifier (U, U2, U3) coupled to the at least one infrared photodetector, for amplifying an electrical signal generated by the at least one infrared photodetector (D1 or D3);
- (c) a bandpass filter (in front of photodetectors) coupled to the at least one infrared photodetector; and
- (d) at least one infrared light emitter (at IR out), coupled to the amplifier, for emitting a signal in response to an electrical signal generated by the at least one infrared photodetector;

wherein the desired impinging infrared light passes through the bandpass filter before impinging on the at least one infrared photodetector, wherein the bandpass filter is configured to pass desired impinging infrared light and block undesired impinging wavelengths of light (interference filter made of two thicknesses of glass which have been coated with thin layers of metal - as in a half-surfaced mirror - and spaced precisely to cause cancellation of the reflected wavelengths).

5. The infrared receiver of claim 4, wherein more than one infrared photodetector (D1 and D3) is used to increase the sensitivity of the receiver to the impinging infrared light.

12. An interference resistant communication system, comprising:

a detector (D1 or D3) for receiving an optical communication signal;

an amplifier (U, U2, U3) coupled to the detector, for amplifying an electrical signal generated by the detector;

a filter (in front of detector) coupled to the detector, for permitting the optical communication signal to substantially pass through the filter while substantially preventing interfering signals from reaching the detector (interference filter made of two thicknesses of glass which have been coated with thin layers of metal - as in a half-surfaced mirror - and spaced precisely to cause cancellation of the reflected wavelengths); and

a light emitter (at IR out) coupled to the amplifier, for emitting a signal in response to an electrical signal generated by the detector.

13. The interference resistant communication system of claim 12, wherein the detector comprises at least one photodetector (D1 or D3).

14. The interference resistant communication system of claim 13, wherein the filter is a bandpass filter.

16. The interference resistant communication system of claim 15, wherein the optical communication signal is transmitted as an infrared signal (it is IR).

17. A method for communicating, comprising:

detecting an electromagnetic communication signal (IR at D1 or D3);

converting the electromagnetic communication signal to an electrical signal (by D1 or D3);

amplifying the electrical signal;

filtering (filters in front of D1, D3) the electromagnetic communication signal prior to detecting the electromagnetic communication signal;

emitting an electromagnetic signal (at IR out) in response and corresponding to the electrical signal, wherein a desired optical communication signal is substantially converted to an electrical signal while interfering signals are substantially prevented from being converted to an electrical signal (interference filter made of two thicknesses of glass which have been coated with thin layers of metal - as in a half-surfaced mirror - and spaced precisely to cause cancellation of the reflected wavelengths).

18. The method of claim 17, wherein detecting the electromagnetic communication signal is performed using a plurality of detectors (D1 and D3), the plurality of detectors being used to increase sensitivity.

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